Top Five Reasons for Investing in Cisco MDS 9000 32-Gbps Fabric Switches
SAN telemetry built into the switch

Cisco® MDS 32-Gbps switches offer built-in network processors that can capture key metrics from IO flows from every connected device at wire speed for telemetry without the need for any additional hardware.

Enterprise-class features as standard

The switches offer high-end features such as slow-drain isolation, link encryption, link diagnostics, Virtual Machine Identity server, and up to 8300 Buffer-to-Buffer (B2B) credits per port-group, all historically available only in high-end modular switches.

Affordable and durable investment

They provide lower total cost of ownership due to small form factor at entry level and investment protection through latest technology such as FC-NVMe at competitive prices.

High reliability and availability

The switches provide the same reliability in switching, performance, and highly available component design that MDS switches are renowned for.

Simple operation and interoperability

You can configure a switch in a matter of minutes and manage it through a simple onboard GUI. The switches are interoperable with all existing installed bases of Fibre Channel switches and devices operating at 4-, 8-, 16-, and 32-Gbps.

SAN Telemetry

Figure 1. SAN Telemetry deployment options

Small-scale departmental SAN

Large-scale enterprise SAN

The Cisco MDS 9000 32-Gbps Fabric Switch offers built-in Storage Area Network (SAN) telemetry that gives you visibility into the performance of every workload in the SAN from any point in the network. The fabric switches enable this capability at a very affordable price point, making them especially attractive for small departmental SANs (Figure 1) that want to gain visibility without having to invest in expensive hardware.

For enterprise SANs built on earlier-generation switches (Figure 1), you can seamlessly add this switch to the top of rack or host edge to enable visibility. The host-edge deployment also provides a telemetry reference point close enough to the applications, one of the recommended best practices for SAN analytics.

These high-performance switches can also scale workloads without having to add switches when data grows. A dedicated telemetry port helps ensure that the high volume of telemetry data can stream out of the switches without having to contend with the existing management interface. Telemetry can be run on board using a Command-Line Interface (CLI) or programmable Structured Query Language (SQL)-type queries as well.
Standard enterprise class

For enterprise-class deployments (Figure 2), features such as Fibre Channel link encryption, up to 8300 shared buffer-to-buffer credits per port-group of 16 ports, 500 dedicated buffer-to-buffer credits per port, slow-drain link isolation, link diagnostics, I/O acceleration, and Virtual Machine Identity server come standard on the MDS 9000 Fabric Switch. Available in a range of port configurations and on demand licenses, they provide the flexibility to be deployed as end-of-row or top-of-rack with bi-directional airflow option, making them suitable for deployment with several data center cooling designs.

Figure 2. Edge-core deployment for large enterprises

Affordable and lasting

The innovative design of the 32-port 32-Gbps fixed switch with only half the ports in base form factor powered by a single power supply unit and cooled by only two fans helps reduce the cost of power and cooling significantly, a feature that is especially appealing to entry-level SAN customers.

In addition, you have the flexibility of choosing an 8-port configuration as the base model and then expanding to 16 ports in the future by activating a license. This setup gives you the freedom to invest in the additional physical 16 ports on a pay-as-you-go basis. The most affordable entry-level switch for the latest-generation Fibre Channel also helps ensure that investments are protected for a much longer period of time using simple technology upgrades.

Figure 3. Semi-modular design for lower costs

These high-end features are typically available only in more expensive switches. An example is using the ample buffer-to-buffer credits with link encryption to connect geographically separated data centers over long distances without performance hits and without incurring unacceptable latency. MDS 32-Gbps switches can connect over 612 km (310 miles) using native encrypted Fibre Channel over dark fiber.
Highly reliable and available

Figure 4. Higher availability through expansion modules

MDS fixed switches use the same nonblocking design as previous-generation models, helping guarantee full line rate of 32 Gbps on every port. In addition, they use the same centralized arbitration technology that helps assure predictable and consistent performance between any two ports on the switch. In terms of High Availability (HA), on the 32-port switch you still have the option of configuring up to one additional power supply to drive full power grid redundancy. MDS 32G fabric switches offer N+1 Fan redundancy as standard. On the 32-Port base configurations, up to 2 additional fans can be optionally configured.

You gain additional high-availability (figure 4) through field-replaceable 16-port expansion modules. Further, the highly available load-balanced Port Channels allow you to use member links that are striped across the base switch and expansion module.

Operational simplicity and interoperability

These switches can now be operational in matter of minutes instead of hours if you use the power-on autoprovision feature, which allows you to configure the switches from a thumb drive that you can attach to a USB drive. Representational State Transfer (REST)full Application Programming Interfaces (APIs) and a built-in Python interpreter provide the option of programming repetitive operations and configuration steps.

You can access the switch GUI through a simple browser that provides very intuitive configuration steps. In addition, the switch operates with the Cisco Data Center Network Manager (DCNM) Fundamental Edition, which is free to download, and you can use it to configure and monitor these switches for any network events, including telemetry.

For more detailed information, please explore MDS fabric switches at: